

What is claimed:

1. Multi-layer forming fabric having a paper side warp layer and a machine side warp layer, the fabric comprising at least one set of paper side wefts, at least one set of machine side wefts and at least one pair of interchanging weft yarns, the members of each interchanging weft pair together forming one continuous weft path on the paper side wherein all of said interchanging weft pair members interweaving with at least one paper side warp and ^{with} at least one interchanging weft pair one of the members (binder member) interweaving with at least one machine side warp and with at least one paper side warp yarn and the other member (top member) interweaving only with at least one paper side warp yarn.
2. Multi-layer forming fabric according to claim 1, characterized in that the paper side layer of the fabric comprises only paper side warp yarns and interchanging weft yarn pairs, of which at least one pair comprises one binder member and one top weft member.
3. Multi-layer forming fabric according to one of the preceding claims, characterized in that a binder member or a top member of the binder-top pair provides a stiffening section by remaining inside the fabric for two or more adjacent warp yarns and by being bound on each end of the stiffening section with a warp yarn of the same fabric layer.
4. Multi-layer forming fabric according to one of the preceding claims, characterized in that the length of a top member stiffening section is between 5 and 9.

5. Multi-layer forming fabric according to one of the preceding claims, characterized in that the length of a binder member stiffening section interlacing with machine side warp yarns is between 2 and 4.
6. Multi-layer forming fabric according to one of the preceding claims, characterized in that the binder member of at least one interchanging weft pair per weave repeat interweaves with only one machine side warp yarn.
7. Multi-layer forming fabric according to one of the preceding claims, characterized in that the binder member of at least one interchanging weft pair per weave repeat interweaves with more than one paper side warp yarn.
8. Multi-layer forming fabric according to one of the preceding claims, characterized in that at least one of the interchanging binder-top yarn pairs is providing a minimum of 2 segments within each weave repeat.
9. Multi-layer forming fabric according to one of the preceding claims, characterized in that least 50% of the pairs of interchanging yarns, and most preferably 100% of such pairs, are intrinsic, interchanging binder-top yarn pairs providing a minimum of 2 segments within each weave repeat
10. Multi-layer forming fabric according to one of the preceding claims, characterized in that the ratio of paper side to machine side warp yarn diameter is in excess of 0.75.

11. Multi-layer forming fabric according to one of the preceding claims,
characterized in

that the cover factor of the paper side warp yarns/cm unit width is in
excess of 40.0%.

12. Multi-layer forming fabric according to one of the preceding claims,
characterized in

that the paper side and machine side warp diameter combinations are
selected from the group of: 0.11mm paper side and up to 0.15mm
machine side; 0.12mm paper side and up to 0.17mm machine side;
0.13mm paper side and up to 0.19mm machine side; 0.14mm paper side
and up to 0.19mm machine side; 0.15mm paper side and up to 0.20mm
machine side; and 0.16mm paper side and up to 0.22mm machine side.

13. Multi-layer forming fabric according to one of the preceding claims,
characterized in

that the paper side MD yarns/cm unit width when using 0.12mm paper
side MD yarns is in the region of 35 to 40 yarns/cm; when using 0.13mm
paper side MD yarns is in the region of 30 to 35 yarns/cm; when using
0.14mm paper side MD yarns is in the region of 30 to 35 yarns/cm; when
using 0.15mm paper side MD yarns is in the region of 28 to 33 yarns/cm
and when using 0.16mm paper side MD yarns is in the region of 26 to 33
yarns/cm.

14. Multi-layer forming fabric according to one of the preceding claims,
characterized in

that the effective paper side to machine side CD ratio is 2:1.

15. Multi-layer forming fabric according to one of the preceding claims,
characterized in

that each of the members of at least one interchanging weft pair form per

segment at least two knuckles over paper side warp yarns.

16. Multi-layer forming fabric according to one of the preceding claims,
characterized in
that the number of paper side knuckles made by a top member is 2 or 3.
17. Multi-layer forming fabric according to one of the preceding claims,
characterized in
that the number of paper side knuckles made by a binder member is 2 or
3.
18. Multi-layer forming fabric according to one of the preceding claims,
characterized in
that for a interchanging weft pair the ratio of paper side knuckles made by
a top member and the paper side knuckles made by a binder member is
between 0,5 and 1,5.